



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,363	10/28/2003	Stewart R. Wyatt	200205662-1	5968

22879 7590 08/18/2005

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

SUN, SCOTT C

ART UNIT	PAPER NUMBER
----------	--------------

2182

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,363

Applicant(s)

WYATT ET AL.

Examiner

Scott Sun

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-9 drawn to an invention, classified in class 713, subclass 324.
 - II. Claims 10-20, drawn to an invention, classified in class 710, subclass 57.
 - III. Claims 21-24, drawn to an invention, classified in class 713, subclass 322
2. Inventions I, II, and III are related as combination and subcombination.

Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the power-saving error correction logic can be turned on/off without the buffer or adjusting rate of transfer. The subcombination has separate utility such as power-conservation and transfer-rate matching.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Jonathan Harris (Reg. No. 44144) on 08/01/2005 a provisional election was made to prosecute the invention of group I, claims 1-9. Affirmation of this election must be made by the applicant in replying to this

office action. Claims 10-24 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Trost (US Patent #4,288,860).

As per claim 1, Trost discloses a storage system, comprising:

a storage controller for managing transfer of data between a host and storage memory; (figure 1)

a data mover coupled to the storage controller, the data mover handles data transferred between the host and the storage memory; and (figure 1)

a buffer coupled to the data mover for storing data being transferred between the host and the storage memory; (figure 1)

wherein, to conserve power, the storage controller modifies operation of the storage system based on status of the data transfer. (column 1, lines 51-60)

As per claim 2, Trost discloses the storage system of claim 1 wherein the storage controller modifies operation of the storage system based on capacity of the buff.

(Column 6, line 66 – Column 7, line 6)

Art Unit: 2182

As per claim 4, Trost discloses the storage system of claim 1 wherein data is transferred between the data mover and host at a first transfer rate, and data is transferred between the data mover and storage memory at a second transfer rate, and wherein the storage controller modifies operation of the storage system by functioning to match the first and second transfer rates. (Column 6, lines 66 – column 7, line 6)

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trost as applied to claims 1, 2, and 4 above, and further in view of White (PG Pub # US 2003/0149929 A1).

As per claim 3, Trost does not disclose expressly the storage system of claim 1 wherein the storage controller modifies operation of the storage system by turning off a portion of the storage system.

White discloses the storage controller modifies operation of the storage system by turning off a portion of the storage system. (paragraph 12)

As per claim 5, Trost does not disclose expressly the storage system of claim 1 further comprising: a storage memory interface coupled to the data mover, the storage memory interface handles data transferred to and from storage memory, the storage

Art Unit: 2182

memory interface handles data transferred to and from storage memory, the storage memory interface also including error correction logic.

White discloses a storage memory interface coupled to the data mover, the storage memory interface handles data transferred to and from storage memory, the storage memory interface also including error correction logic (paragraph 12, paragraph 18; figure 1)

As per claim 6, Trost does disclose expressly the system of claim 5 wherein the storage controller modifies operation of the storage system by turning off the error correction logic of the storage memory interface in the storage system.

White discloses the system of claim 5 wherein the storage controller modifies operation of the storage system by turning off the error correction logic of the storage memory interface in the storage system (paragraph 12, 19-20)

As per claim 7, Trost does not disclose expressly the system of claim 5 wherein the error correction logic of the storage memory interface comprises: an encoder for encoding data to be stored in storage memory; and a decoder for decoding data retrieved from storage memory; wherein the storage controller modifies operation of the storage system by turning off the decoder in the error correction logic of the storage memory interface.

White discloses the system of claim 5 wherein the error correction logic of the storage memory interface comprises:

an encoder for encoding data to be stored in storage memory; and (figure 1, paragraph 20)

Art Unit: 2182

a decoder for decoding data retrieved from storage memory; (figure 1, paragraph 12, 18, 20)

Wherein the storage controller modifies operation of the storage system by turning off the decoder in the error correction logic of the storage memory interface (paragraph 19-20)

As per claim 8 and 9, the examiner finds it obvious and inherent in White's invention that turning off the decoder in the error correction logic involves disconnecting either power or clock signal to the decoder.

Furthermore, Trost's invention and White's invention are analogous art because they are from the same problem solving area of power conservation in storage systems. Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Trost's invention and White's invention by adding power-saving error correction logic disclosed in White's invention to Trost's invention to further provide Trost's storage system with power saving features while at the same time maintain data integrity. (White, paragraph 6-7)

Art Unit: 2182


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Sun whose telephone number is (571) 272-2675. The examiner can normally be reached on M-F, 10am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on (571) 272-4083. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SS

8/2/2005


TAMARA PEYTON
PRIMARY EXAMINER